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-  **KNORR-BREMSE**

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-  **NEW YORK AIR BRAKE**

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-  **IFE**

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-  **MICROELETTRICA**

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-  **SELECTRON**

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-  **EVAC**

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-  **ZELISKO**

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-  **RAILSERVICES**

# AUTOMATIC COUPLING SOLUTIONS

**Making mobility safe –  
Knorr-Bremse’s daily mission.**



## Product focus: Coupling systems – future-ready couplers for passenger and freight trains



### Overview

- Coupling systems combines KB's long-standing tradition in coupler manufacturing<sup>[1]</sup> with the company's current positioning as a market leader for innovative rail systems
- The coupling systems business unit was re-established in 2019
- Coupling systems combines the passenger train and freight car coupler businesses
- Knorr-Bremse couplers combine outstanding quality with a focus on maximum safety and high availability
- Knorr-Bremse's "future-ready" approach is rounded off by a customer-oriented service offering that combines global presence with local service centers and field service for short response times



### Key locations

#### Munich (DE)

- HQ
- Lead Engineering
- Sales & Business Development

#### Budapest (HU)

- Engineering
- Testing & Validation
- Production

## Couplers for passenger trains: Modular target portfolio enables delivery of all relevant coupler types

### Passenger train target product portfolio: Automatic center buffer coupler "AutoLink", Semi-permanent coupler "ShortLink" and Adapter coupler "RescueLink"

#### Mechanical heads

- Mainline (HS/ MU): T10 (TSI)
- Metro: T25 & T35 & T330 & T130
- LRV: T430 & T530
- Others on request

#### Electrical couplers

- Scalable standard sizes (top-, bottom- and side-mounted solutions)
- Customized to requirements

#### Electrical coupler operating mechanisms

- For side-, top- and bottom-mounted electrical couplers
- All solutions include self-locking function

#### Draftgear (reversible)

- EFG3
- EFG3 with shear-off
- Gas hydraulic
- Polymer Pad Articulation

#### Draftgear (irreversible)

- Deformation tube
- Deformation tube behind bearing bracket

#### Vertical support & centering

- Solution with combination of deformation tube and shear-off
- Pneumatic solution
- Mechanic solution

#### Pneumatic valves

- MRP
- BP for 1- and 2-position heads

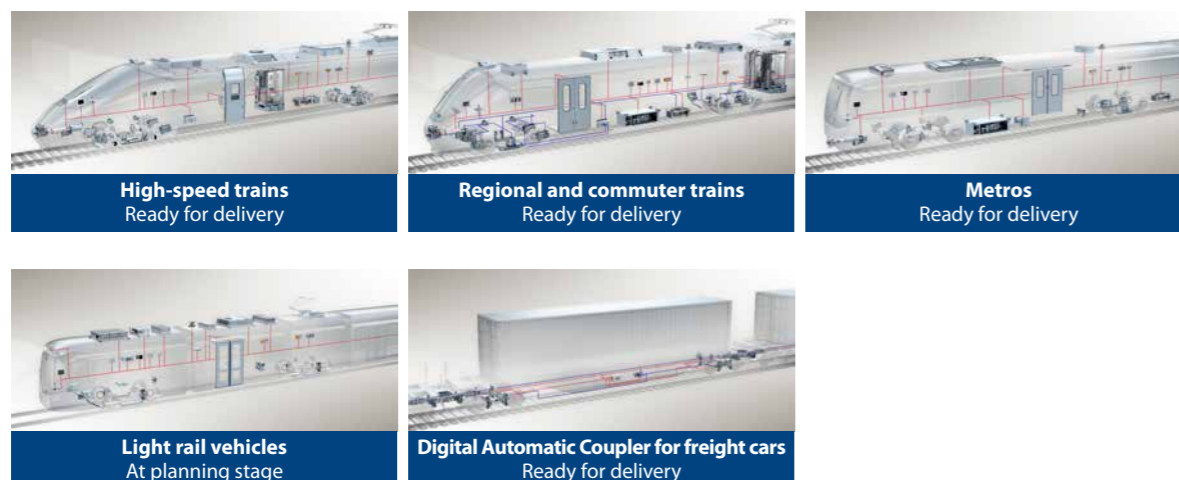
#### Additional functions

- Pneumatic system for 1- and 2-position heads
- Heating systems

#### Additional products

- Condition monitoring & CBM
- Standards-compliant Type 10 adapter
- Lightweight Type 10 adapter
- Other adapter solutions on request
- Wear gauges
- Semi-permanent eyebolt connection

### Current and future product areas



High-speed trains  
Ready for delivery

Regional and commuter trains  
Ready for delivery

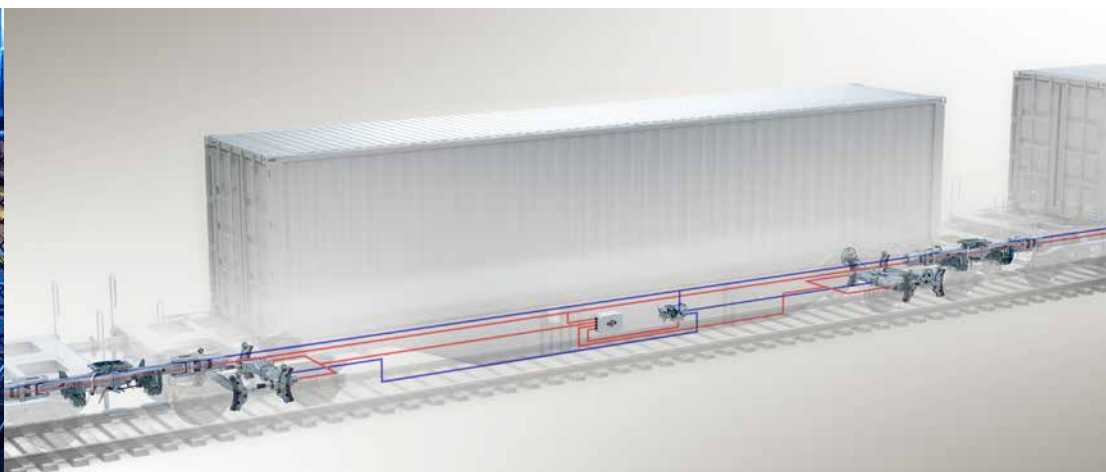
Metros  
Ready for delivery

Light rail vehicles  
At planning stage

Digital Automatic Coupler for freight cars  
Ready for delivery

<sup>[1]</sup> 1960 – Unicoupler AK69e and 1990 – Z-AK

# Couplers for freight trains: Knorr-Bremse drives introduction of the Digital Automatic Coupler (DAC)



## FreightLink Digital Automatic Coupler

- Digital Automatic Couplers (DACs) facilitate rail freight automation and enable connected, train-wide functionalities
- The DAC plays a key role in Knorr-Bremse's strategy to make modern rail freight transportation fit for the 21st century
- DACs will form an integral part of Knorr-Bremse's overarching "automated digital freight train" offering, which includes innovative solutions that combine DACs with core Knorr-Bremse competencies such as braking systems, digitalization and automation
- Knorr-Bremse is a member of all relevant national and European bodies
- Like all Knorr-Bremse couplers, our Digital Automatic Couplers and compatible locomotive couplers are developed in Munich and Budapest

